

CLAIMS

1. A glazing element (12) for an opening defined by opaque boundaries (13), characterised in that it has or incorporates means (25, 26, 27; 33e, 34e, 35) for
5 diverting light passing through an edge region (E) of the element (12) whereby to enlarge the field of view through the opening.

2. A glazing element according to Claim 1, characterised in that the means (25, 26, 27; 33e, 34e, 35) for diverting light passing through the edge region of the element
10 is a refractor (25).

3. A glazing element according to Claim 1 or Claim 2, characterised in that the means (25, 26, 27; 33e, 34e, 35) for diverting light passing through an edge region (E) of the element (12) is integrally formed with the said element (12).
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4. A glazing element (12) according to Claim 1 or Claim 2, characterised in that the means (25, 26, 27; 33e, 34e, 35) for diverting light passing through an edge region (E) of the element (12) is formed separately from the said element (12) and fixed, attached or otherwise held in physical juxtaposition with respect thereto.
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5. A glazing element (12) according to any preceding Claim, characterised in that it is adapted to fit into the said opening and having a central region (M) through which light can pass substantially undeviated and an edge region (E) which refracts light through an angle as it passes therethrough, the angle being greater closer to the edge of

the element (12).

6. A glazing element (12) according to Claim 5, characterised in that it comprises at least two layers (33,34) of optically transparent material joined face-to-face over substantially the whole area thereof, an edge region (33e, 34e) of each of the said two layers (33, 34) being formed such that the two layers (33, 34) diverge from one another towards the periphery of the said element (12) whereby to form a negative cylindrical lens over the said edge region (E).

10 7. A glazing element (12) according to any preceding Claim, characterised in that the means (25, 26, 27; 33e, 34e, 35) for diverting light is so formed that there is no substantial surface discontinuity between the region (M) of the element (12) over which no light diversion takes place and the region (E) of the element (12) at which light is diverted.

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8. A glazing element (12) according to Claim 6, characterised in that a wedge shape insert is located between the said two layers (33, 34) at an edge region (33e, 34e) (thereof).

20 9. A glazing element (12) according to any preceding Claim, characterised in that in which a Fresnel refractor (25) is attached, secured or held in a relative positional relationship with respect to an edge region (E) thereof.

10. A glazing element (12) according to any preceding Claim, characterised in that

the said means (25, 26, 27; 33e, 34e, 35) for diverting light passing through an edge region (E) of the element (12) is located at two opposite edge regions of the element (12).

5 11. A glazing element (12) according to any preceding Claim, characterised in that the said means (25, 26, 27; 33e, 34e, 35) for diverting light passing through an edge region (E) of the element (12) comprises a negative cylindrical lens.

12. A glazing element (12) according to any preceding Claim formed as a motor
10 vehicle windscreen.

13. An optical element (25) characterised in that it is adapted for fitting to or locating in association with a motor vehicle windscreen, to form a glazing element, according to any preceding claim.

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14. An optical element (25) for extending the field of view through an edge region (E) of an opening defined by opaque boundaries (13), comprising a refractor (25) adapted to fit against a glazing element (12) of the opening in the said edge region (E) thereof and to divert light passing therethrough towards the observer through an angle
20 such as to bring its apparent direction towards a central region (M) of the glazing element (12).

15. An optical element according to Claim 14, characterised in that it is in the form of a negative acylindrical lens.

16. An optical element according to Claim 14 or Claim 15, characterised in that it is in the form of a Fresnel lens.

17. An optical element (36) according to Claim 16, characterised in that the
5 Fresnel lens has a plane face (37) and a faceted face (38) and the angle of inclination (α) of the facets (39) with respect to the plane face (37) varies with the square of the distance (36) from one edge (41) of the element (36).

18. An optical element (36) according to Claim 17, characterised in that the angle
10 of inclination (α) of the facets (39) varies according to the relation:

$$\alpha = kx^2$$

where: k is a constant and x is the distance from the narrow end (41) of the element.

15 19. An optical element (36) according to Claim 18, characterised in that the constant κ is 0.003.

20. An optical element (36) according to any of Claims 16 to 19, characterised in that the pitch of the Fresnel lens facets across the width of the element is in the region
20 of 0.5mm preferably 0.508mm.

21. An optical element (36) according to any of Claims 16 to 20, characterised in that the riser draft angle varies by 0.1° per mm across the width of the element.

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22. An optical element according to Claim 21, characterised in that the riser draft angle is in the region of 10^0 at the narrow end (41) of the element (36).

23. A motor vehicle windscreen characterised by having an optical element (25)
5 according to any of Claims 14 to 16 affixed or otherwise held or secured in position thereon.

24. A motor vehicle windscreen according to Claim 23, characterised in that the optical element (25) is a generally cylindrical negative lens oriented such that its
10 direction of greatest (negative) magnification is generally horizontal.

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